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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Implementation of Section 302 of	)	CS Docket No. 96-46
the Telecommunications Act of 1996	)	
	)	
Open Video Systems	)	

REPLY COMMENTS OF THE
TELECOMMUNICATIONS INDUSTRY ASSOCIATION IN THE
NOTICE OF PROPOSED RULE MAKING

The Telecommunications Industry Association ("TIA") hereby submits the following comments in response to the comments filed by numerous parties in the Notice of Proposed Rule Making adopted by the Commission in the above-captioned proceeding.[1]

I. Introduction

The TIA has a membership of nearly 600 U.S. companies which manufacture and provide communications and information technology equipment, products, systems, distribution services, and professional services throughout the world. Among TIA's members are most of the nation's suppliers of optical fiber, optical cable, and a whole range of passive and devices associated with advanced broadband systems. TIA's members' products are deployed by a whole range of telecommunications service providers including inter-exchange carriers, local carriers, cable TV operators, competitive access providers, and utilities, just to name of a few of their important market segments.

TIA's members have invested considerable resources over the last quarter century to advance the deployment of broadband technology. Fortunately, considerable progress has been made over

[1] Notice of Proposed Rule Making, CS-Docket No. 96-46, In the Matter of Implementation of Section 302 of the Telecommunications Act of 1996 -- Open Video Systems, FCC 96-99, released March 11, 1996, 61 Fed. Reg. 10946 March 1996.

this period. Rapid deployment of fiber optics and other advanced broadband technology began with the introduction of competition in the inter-exchange market in the early 1980s. Since that time, volume has increased and costs have declined dramatically. One of TIA's members estimates that light-wave transmission speeds have doubled and costs have dropped by approximately 50% since advanced broadband systems were first deployed in the early 1970s. As costs have declined, advanced broadband technology has been deployed deeper into the network by all providers.

Despite this progress, the deployment of the technology in the local loop has been slow. Studies have shown that regulation has posed a significant barrier to deployment. One study estimates that investment in digital infrastructure -- fiber optics, SS7, and ISDN -- during 1991 would have been over 100% higher in states that use rate-of-return regulation if they had used incentive regulation, specifically pure price caps, instead.[2] Based upon the experience of TIA's members with deployment of optical fiber technology in the inter-exchange market, we believe the absence of robust competition in the local market has also posed a barrier to investment in fiber optics and other advanced broadband technology.

In light of these barriers to investment in such advanced technology for the local market, TIA became a strong supporter of the Telecommunications Act of 1996 ("1996 Act").[3] TIA's support for the 1996 Act was based on its belief that fundamental regulatory reform and competition in the local telecommunications market are essential and necessary conditions for the timely deployment of advanced telecommunications capability to all Americans.

Absent such reform, TIA is convinced that the universal deployment of fiber optics and other advanced broadband capability would not be achieved in the United States until some time in the

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[2] The Effect of Incentive Regulation on Local Exchange Companies' Deployment of Digital Infrastructure, AEI Telecommunications Summit: Competition and Strategic Alliances, American Enterprise Institute, Table 6, July 7, 1994.

[3] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, enacted February 8, 1996 ("1996 Act").

decade of 2030. One of TIA's members presented a cost model to the Commission in 1992 vividly demonstrating this point.[4] TIA believes that if the 1996 Act is implemented so as to achieve a high degree of competition and attendant deregulation, the deployment of fiber optics and other advanced broadband capabilities will be significantly accelerated. In fact, the time for universal deployment could be cut in half. This acceleration will significantly enhance our national welfare as our nation becomes increasingly more dependent on telecommunications in a growing information and knowledge based world economy.

II. The Impact of OVS on Advanced Technology Deployment

We believe that if open video systems ("OVS") as provided for under Section 301(a) of the 1996 Act is aggressively deployed, by either local exchange carriers, cable TV operators, or any other provider, the deployment of fiber optics and other advanced broadband technologies will be significantly accelerated. This is due to the fact that OVS operators will likely have to deploy more capacity than they otherwise would deploy if they were to provide the same video programming service over a traditional cable system.

For example, if a provider wanted to provide 100 channels of video programming on a traditional cable system, they would simply deploy a 100 channel system. But, if they chose to provide the same video programming via OVS, they must deploy more capacity, perhaps as much as 300 channels, in order to be certain that they will have sufficient capacity to meet their own needs. This need arises from the provision in the 1996 Act that prohibits an OVS operator from selecting video programming for carriage on more than 1/3 of the activated channel capacity on the system if demand exceeds channel capacity.[5] This need to deploy more capacity in the local market will in turn drive the demand for more advanced broadband technology

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[4] Cost of a National Fiber Optic Infrastructure -- Video Dialtone and Beyond, prepared for the Video Dialtone and Consumer FCC Sponsored Conference, October 28, 1992, Washington, DC.

[5] 1996 Act § 653(b)(1)(B).

including fiber optics, video compression, and a whole range of active and passive devices designed to increase capacity at lowest cost.

TIA raises this issue now in the reply round because we note that no party cited the importance of OVS to the deployment of advanced telecommunications capability in the initial round of comments. We believe the Commission must consider this factor (i.e., this impact of OVS on the deployment of advanced telecommunications capability) in its final order on OVS because the 1996 Act requires the Commission to "...encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans..."[6] The Commission solicited views in its Notice on how to meet the Section 706 Congressional mandate within the context of OVS rules.[7] TIA believes that Section 706 requires the Commission to take bold action to ensure that OVS is aggressively deployed.

III. The Challenge

The FCC's challenge is to be bold in the adoption of OVS rules because failure to be bold will probably result in the failure of OVS deployment. If this occurs, the Commission will lose a significant opportunity to fulfill its mandate under Section 706 of the 1996 Act to encourage the deployment of advanced telecommunications capability to all Americans on a reasonable and timely basis. Similarly, the economic benefit of such acceleration will be lost to the nation.

We believe that the Commission must be bold because the economics of OVS deployment will not be particularly attractive unless the Commission gives operators -- either local exchange carriers, cable companies, or other providers -- the maximum opportunity and flexibility to develop a business case for this new innovative service. If business is to proceed as usual, we believe that OVS will not be an economically viable alternative for operators because the revenue potential of the "business as usual" case will probably not justify the investment.

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[6] 1996 Act §706(a).

[7] Notice para 73.

Appendix A provides a summary of the options an operator has on a going forward basis from the perspective of system costs, capacity, and revenue potential. It starts with the "base case" for an operator who must decide how to structure his business to provide video programming over a newly built system. The operator has two choices: (1) build a traditional cable TV system reflected in the base case of Appendix A, or (2) build an OVS reflected in two different alternatives described in Appendix A.

A quick review of Appendix A reveals the fact that OVS beats the base case in terms of revenue potential only in situations where the operator is prepared to make a significantly greater investment (i.e. OVS Alternative #2) in order to provide capacity for non-affiliated programmers. The risk associated with making that increased investment is significant because it requires about twice the up-front investment cost but generates only about 30% more revenue potential.

This rather unimpressive incremental revenue potential arises from two factors:

> (1) the OVS operator will cannibalize his own video programming through intra-system competition and thus cannot expect to generate the same volume of revenue per channel on its affiliated programming that would be generated if the operator deployed a cable system over which he maintains editorial control; and
>
> (2) the revenue potential associated with providing video transport to non-affiliate programmer is substantially less than that generated by providing transport and affiliated programming over the same channel.

With respect to the latter point, it must be remembered by the Commission that the provision of video transport has not been proven to be particularly economically viable. Local exchange carriers have been able to provide such transport in the form of channel service since the Commission originally adopted its cable TV rules in the early 1970s. While some tried (the District of Columbia is an excellent case in point), channel service has generally not been a success.

Nonetheless, an operator venturing into the provision of video programming by deploying a greenfield facility, would still be inclined to pursue an OVS option like OVS alternative #2 described in Appendix A for one or a combination of three reasons:

> (1) the operator will receive more favorable regulatory treatment for the provision of his affiliated programming than he would if he deployed a traditional cable TV system regulated under Title VI;
>
> (2) the operator believes that he has strategic need to deploy advanced telecommunications capability (e.g. fiber to the curb or switched digital video) and the costs (both variable and fixed) associated with such incremental investment can be recovered in substantial part by selling transport to unaffiliated video programmers; and/or
>
> (3) the operator is able to integrate other services such as POTS and high speed data on OVS, achieving economies of scale or scope that cannot be achieved by the operation and maintenance of two separate systems -- one for the provision of video programming and another for the provision of POTS, data, and other interactive services.

Because the system described OVS Alternative #2 of Appendix A meets the definition of "advanced telecommunications capability"[8] as defined in Section 706 of the 1996 Act, any action the Commission may take to give operators an incentive to invest in such a system would meet the Commission's Section 706 mandate. On the other hand, the decision by an operator to deploy a traditional cable TV system (i.e., one-way video broadcast network) as a means to enter the video marketplace would not contribute to the Commission's efforts to meet the Congressional mandate under Section 706. Thus, anything the Commission does to advance OVS deployment will contribute toward meeting its Section 706 mandate.

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[8] §706(c)(1) states that, "The term "advanced telecommunications capability" is defined, without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.

IV. The Solution

While TIA does not necessarily want to be associated with any particular party's views, we do want to see OVS aggressively deployed by any and all providers. As we have already stated in our comments, we believe that the Commission must pursue minimal regulation and maximum flexibility for the OVS operator in order for our goal to be achieved, but we believe that minimal regulation and maximum flexibility in the context of Title VI regulation alone will be inadequate. The Commission must go further. As stated above, a favorable regulatory environment will give operators an incentive to deploy OVS. But, in all probability, they will need even greater incentives. These added incentives should provide for the integration of existing services over one network in order to realize the scale and scope economics associated with integration of all telecommunications services over one network.

To provide for such a possibility, we believe the Commission should adopt some form of an "incentive upgrade plan" similar to that adopted by the Commission on February 22, 1994, in its Report and Order and Further Notice of Proposed Rule Making in the Cable Re-regulation Docket (MM Docket 93-215).[9] In this plan, the Commission stated that its goal was to "...give cable operators a strong incentive to invest in their networks and to increase the services they offer to customers. This incentive is generated by giving the operator broader flexibility in setting the rates for these added services and capabilities."[10]

We believe that a similar incentive upgrade plan should be provided under FCC rules implementing OVS. This plan will allow operators to come forward with proposals to moderate regulation in exchange for a commitment to deploy advanced telecommunications capability as

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[9] Report and Order and Further Notice of Proposed Rule Making, MM Docket No. 93-215, In the Matter of Implementation of Sections of the Cable Television Consumer Protection and Competition Act of 1992: Rate Regulation, FCC 94-39, released March 30 1994 paras 295-304.

[10] Implementation of Sections of the Cable Television Consumer Protection and Competition Act of 1992; Report and Order and Further Notice of Proposed Rule Making (MM Docket No. 93-251), Executive Summary, February 22, 1994, p. 5.

defined in Section 706 of the 1996 Act. Regulation subject to such moderation would include those issued by the Commission under its Federal authority (e.g., Titles II, Title VI, and its forthcoming OVS rules). In addition, it would also allow for the moderation of state regulation. For example, the Commission should be prepared to consider the use of pure price caps for intra-state services in exchange for a commitment to deploy advanced telecommunications capabilities as defined in Section 706 of the 1996 Act. As noted earlier, studies have shown the pure price caps can provide a powerful incentive for investment in advanced digital infrastructure.[11]

TIA realizes that these are bold initiatives. But, the law requires bold action if the goal of accelerating deployment of advanced telecommunications capabilities to all Americans in a reasonable and timely fashion will be achieved.

Respectfully submitted,

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[11] See Note 2.

APPENDIX A

	Base Case	*OVS Alternative #1*	*OVS Alternative #2*
System Capacity	100 chs	100 chs	300 chs
System Cost	$500-$700/sub	$500-$700/sub	$1200-$1500/sub[2]
Revenue Potential	$50/mo.	$31/mo.	$65/mo.
Assumptions:			
System Design	Hybrid fiber coax system with 500 sub node serving a typical community of several tens of thousands of inhabitants in all cases.	(same as base case)	Fiber-to-the-curb system capable of providing telco services and switched digital services with an analog video overlay. The system serves customers with 16-64 sub node sizes in communities of several tens of thousands.

[1] Values taken from "The Unpredictable Certainty," National Research Council, National Academy Press, 1996. p. 128-129 including headend and settop equipment.

[2] Values for FTTC are variously estimated and depend greatly on density and service level. Sources include, Jones, J.R. "Baseband and Passband Transport Systems for Interactive Video Services," IEEE Communications, May 1994, p. 90-101; Pugh, W., Boyer G, "Broadband Access: Comparing Alternatives, May 1994 p. 90-101; IEEE Communications August 1995 p. 34-46. In both cases a provision for settop costs estimated at $400 were included for comparison's sake.

Revenue Potential	100 chs x $0.50/ch/mo.[3]	OVS operator can't use all its capacity to provide affiliated video programming because non-affiliated video programmers demand 40 chs. OVS operator decides to use only 60 chs to provide affiliated programming to prevent demand from exceeding capacity and triggering the 1/3 limitation of Section 653(b)(1)(B). The resulting revenue potential is the sum of: (1) 60 chs of video at $0.45/ch/mo,[4] and (2) 40 chs of transport at $0.10/ch/mo.[5]	OVS operator needs a minimum of 100 chs to provide affiliated programming to meet competitive needs. Thus, to avoid becoming capacity constrained, he must provide 200 chs to unaffiliated programmers because of the 1/3 limitation provided in Section 653(b)(1)(B). The resulting revenue potential is the sum of: (1) 100 chs of video at $0.45/ch/mo.,[4] and (2) 200 chs of transport at $0.10/ch/mo.[5]

[3] Revenue per channel based on estimated $30/mo. average monthly CATV revenue from providing video programming divided by 60, the estimated average number of channels per CATV system.

[4] Revenue per channel derived from Note 2 with a 10% price reduction because of intra-system competition arising from providing affiliated video programming (i.e. $0.45/ch/mo. rather than $0.50/ch/mo.). Presumably such intra-system competition will have a negative price and revenue effect. TIA has no empirical data to defend this assumption. It is asserted to demonstrate a point. Although TIA believes that intra-system competition will have a price-depressing effect on affiliated programming, we have no analysis to approximate the magnitude of the effect.

[5] Pricing for transport services is not yet established in the market. One estimate can be derived from the work of A.T. Kearny in this field. They estimate that of the revenue paid to the cable operator, 50% returns to the program producer to cover the cost and profit expectations, 45% remains with the programmer (cable operator) to cover system administration costs and profit, and 5% is dedicated to the transport cost recovery and return on plant investment. Kraemer, J. "Local Competition: The War of Many Against One," A.T. Kearny, March 1996. Since an OVS provider will experience billing and operational costs, TIA increased its estimate of available revenues by a factor of 4 to 20%. TIA has no analytical support for this estimate which is included for illustration only.